GOODWE
SOLAR ACADEMY

TECHNICAL
DOCUMENT

AU-EzLogger3000C-Multiple Grid-tied Inverters Monitoring and Export Power Limit Operation

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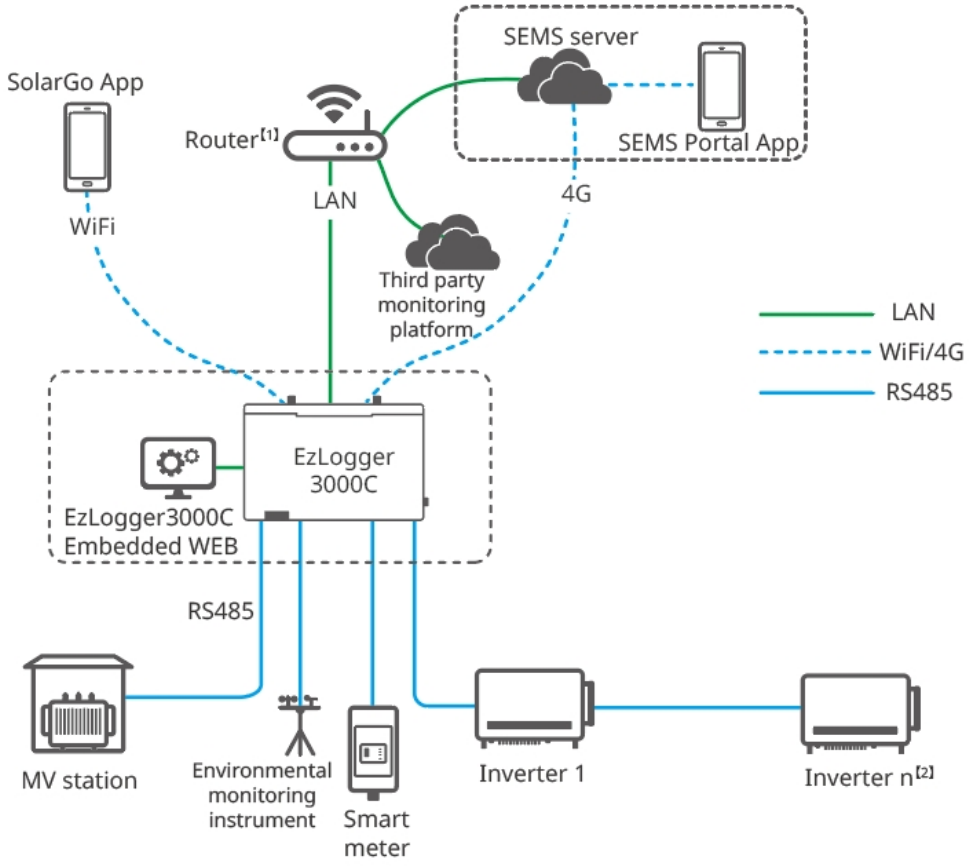
Introduction

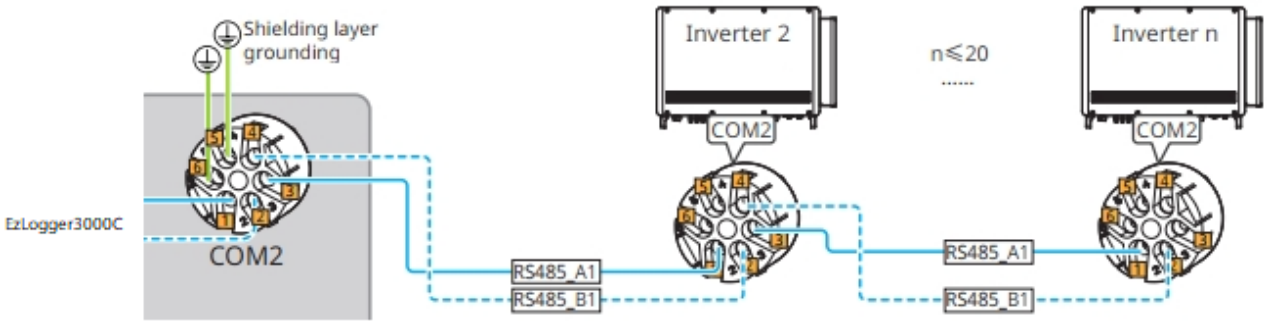
The EzLogger3000C is the latest advancement in GOODWE's suite of communication and monitoring accessories for both residential and commercial & industrial (C&I) grid-tied inverters. This device enables users to connect multiple inverters in a single system, facilitating streamlined monitoring and management through SEMS (or SEMS+, in the future). It is also compatible with select third-party devices, including smart meters from other brands and Environmental Management Inspectorate (EMI) units.

This guide provides comprehensive instructions on connecting multiple inverters via the 485 protocol, installing the electricity meter, configuring the EzLogger3000C network, setting up the power station, and adjusting anti-backflow power settings and DRED (or GSD) devices.

The system diagram of the EzLogger3000C is as follows:



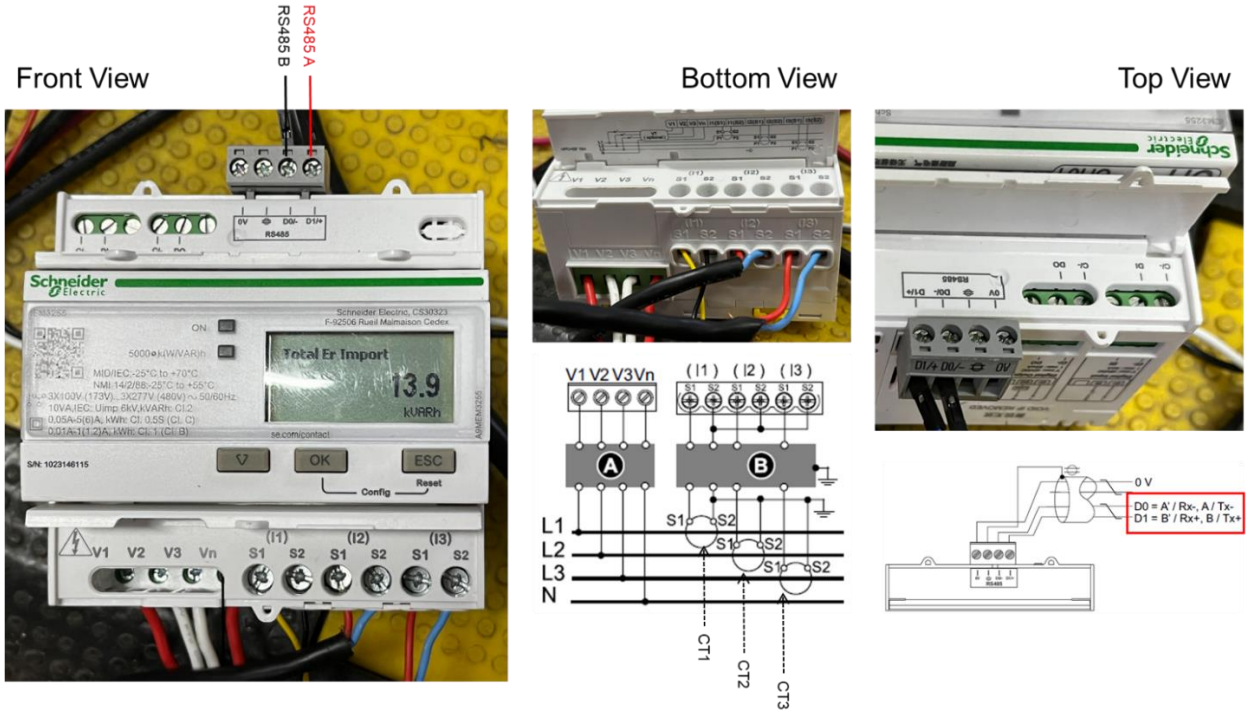
As illustrated in the picture, the inverters are connected in a daisy-chain configuration via RS485. For this example, using the HT Series, the 485 ports on the inverters are configured as follows according to the user manuals:



Connect the inverters in a daisy chain via RS485. As shown in this example, to connect n HT units, use the COM2 port on each inverter. For the first unit, Pin 1 and Pin 2 are used for communication with the EzLogger3000C, while Pin 3 and Pin 4 connect to the next inverter. For subsequent units in the chain, Pin 1 and Pin 2 are connected to the previous unit, and Pin 3 and Pin 4 are used to connect to the next unit, continuing this pattern until the last inverter. Always ensure that Pins 5 and 6 on the first unit are grounded for protection.

Meter Connection and Configuration

The EzLogger3000C is compatible with both GOODWE meters and select third-party meters. For GOODWE products, please consult the relevant user manual. When connecting third-party meters, such as the Schneider iEM3255, follow the wiring diagram:



Please note some third-party meters may not support all the functions, for example, Schneider iEM3255 cannot do export limit. If not sure, contact GoodWe for assistance.

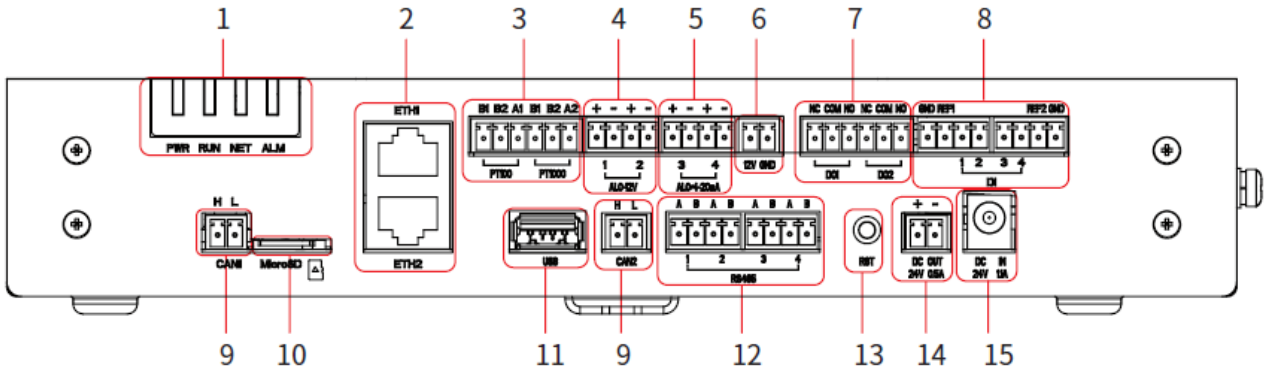
To configure Schneider iEM3255 locally, follow these steps:

1. Press both ‘OK’ and ‘ESC’ simultaneously.
2. Set the Modbus address to 1 and the baud rate to 9600.
3. Enter the default password: 0010.
4. Confirm the change.
5. Set the wiring configuration to three-phase, four-wire (3PH4W).
6. No voltage transformer (VT) configuration is required.
7. Adjust the CT settings to ‘3CTs on I1, I2, I3’.
8. Set the primary side of the CT to 250A and the secondary side to 5A.

For configurations with other meters, please consult the respective user manual or contact GOODWE technical support for assistance.

Install the EzLogger3000C

Here is the front view of the EzLogger3000C:

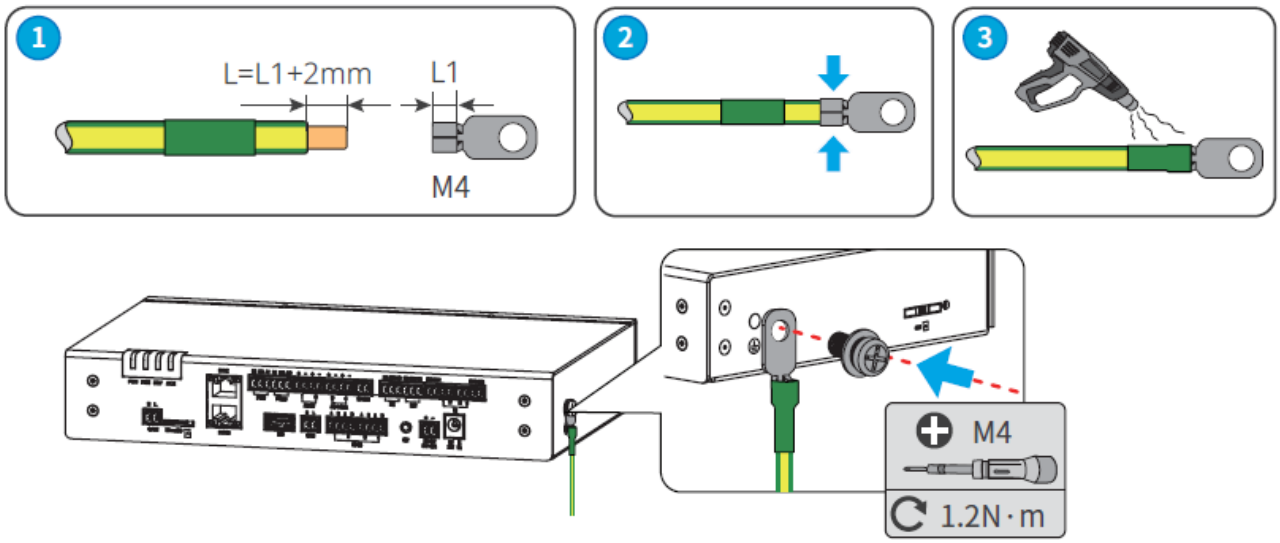


The following table shows some of components and their functions:

Number	Component	Function
1	LED Indicator	shows the status of the device
2	Network Communication Ports (ETH1/2)	• ETH1 is used for external network communication; • ETH2 is used for external network communication or to connect to the device’s embedded web interface
7	DO Ports	DO (DO1/2) signal output port
8	DI Port	DI signal input port, supporting connection to DRED (Demand Response Enabling Device)
12	RS485 Communication Port 1-4	connect inverters, meters, EMI, and other RS485 communication devices
13	Power Input Port (DC IN 24V 1.1A)	24V DC power input connection port

To connect to the device's embedded web interface and set up the entire system, follow these wiring steps:

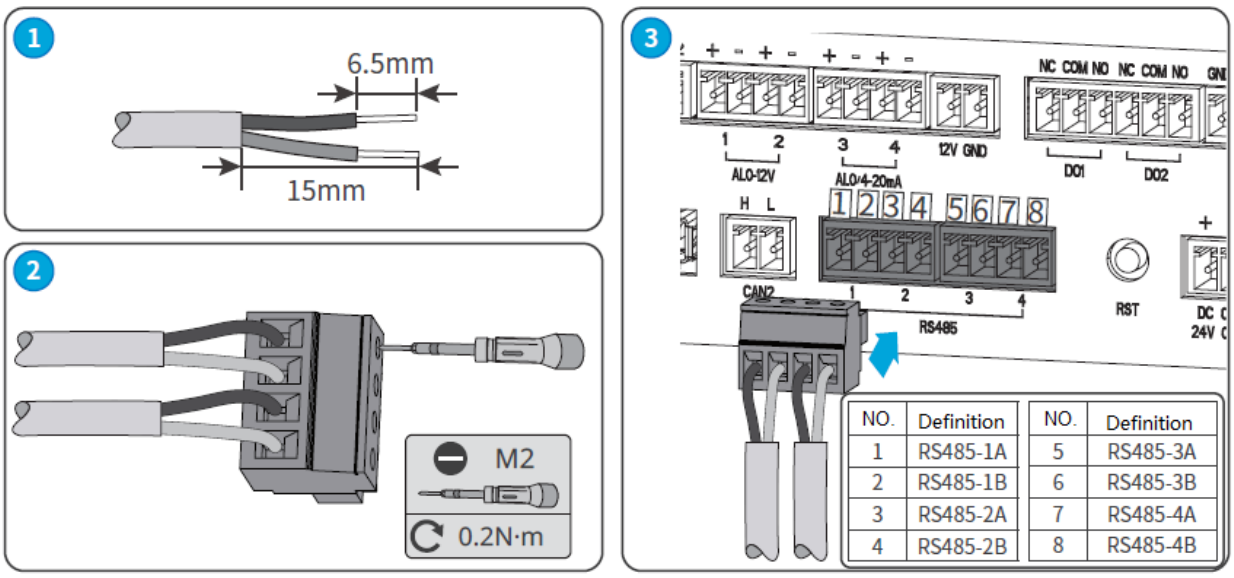
- **Connecting with PE**



Recommended PE cable specifications are as follows:

Protective Grounding Wire: Outdoor copper core cable with a conductor cross-sectional area of 2.5-4 mm² or 14 AWG-12 AWG.
OT Terminals: M4
Fastening Screws: M4

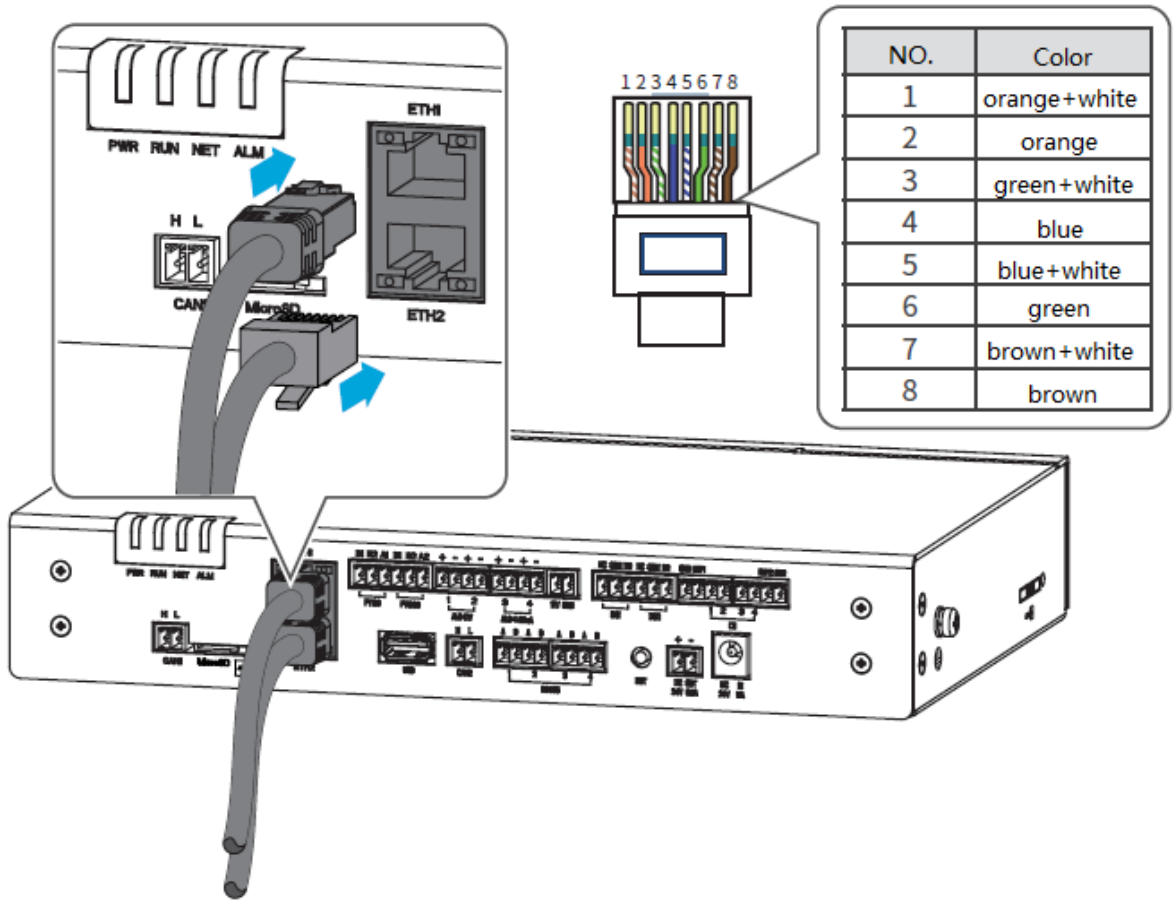
- **Connecting with inverters and meters (RS485)**



NO.	Definition	NO.	Definition
1	RS485-1A	5	RS485-3A
2	RS485-1B	6	RS485-3B
3	RS485-2A	7	RS485-4A
4	RS485-2B	8	RS485-4B

When wiring, ensure that the RS485A port on the data collector is connected to the RS485A signal of other communication devices, and the RS485B port is connected to the RS485B signal of other communication devices.

- **Connecting with LAN Cables**



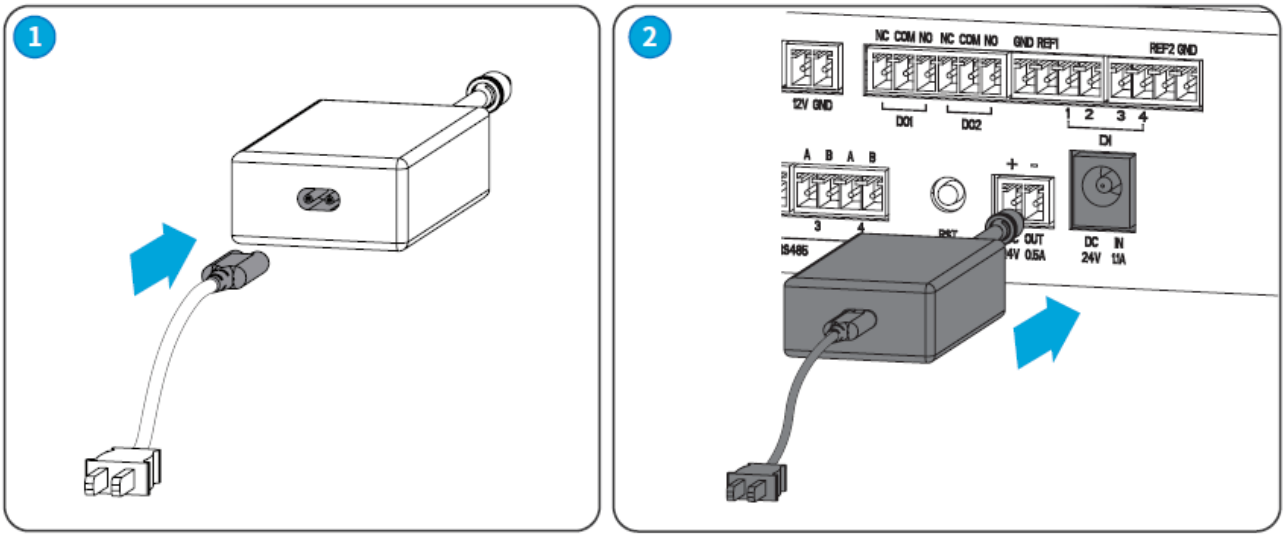
NO.	Color
1	orange+white
2	orange
3	green+white
4	blue
5	blue+white
6	green
7	brown+white
8	brown

Recommended Cable Specifications: Use CAT 5E or higher outdoor shielded network cables with shielded RJ45 connectors.

ETH1: Used for external network communication. By default, this port is set to dynamic IP mode and can be connected to routers, switches, and other devices.

ETH2: Used for external network communication or to connect to the device's local embedded web interface. This port is also set to dynamic IP mode by default, with a reserved virtual fixed IP of 172.18.0.12. It can be connected to routers, switches, and other devices, or directly to a computer for accessing and configuring parameters via the embedded web interface.

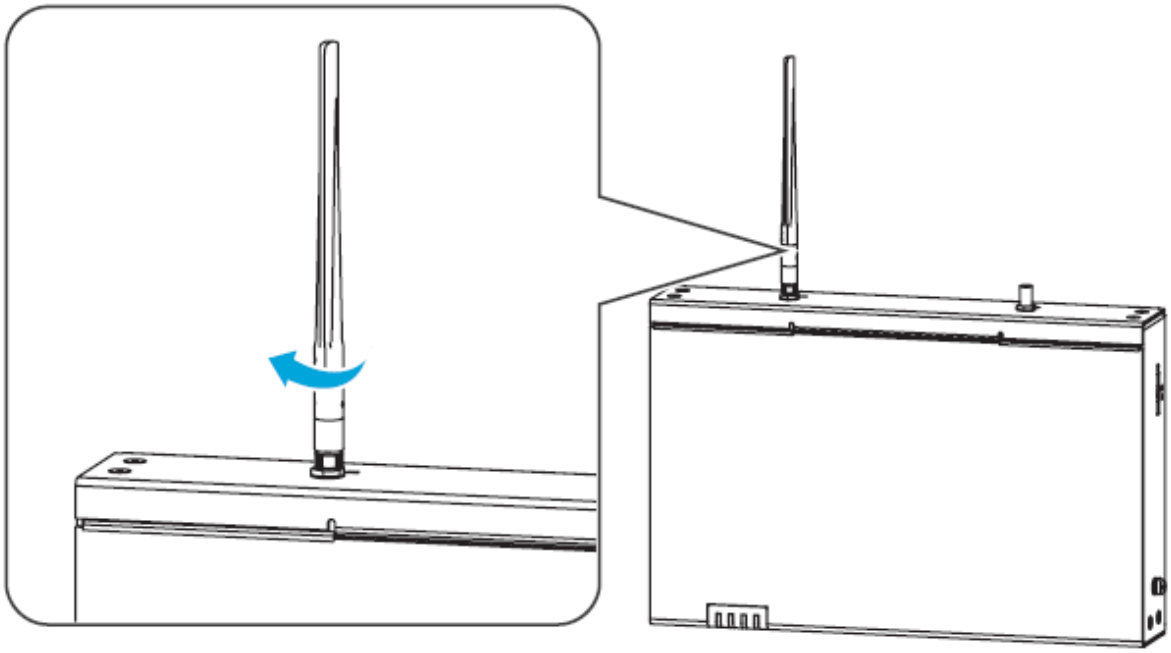
- **Connecting with Power Source**



Connect the power adapter included in the package to the DC input port to power the device:

Appearance: Please refer to the actual power adapter provided.
Specifications: The adapter has an input of AC 100V–240V, with a frequency of 50Hz/60Hz, and an output of DC 24V, 1.5A.

- **Connecting with Wi-Fi Antenna (optional)**



For Wi-Fi hotspot signal:

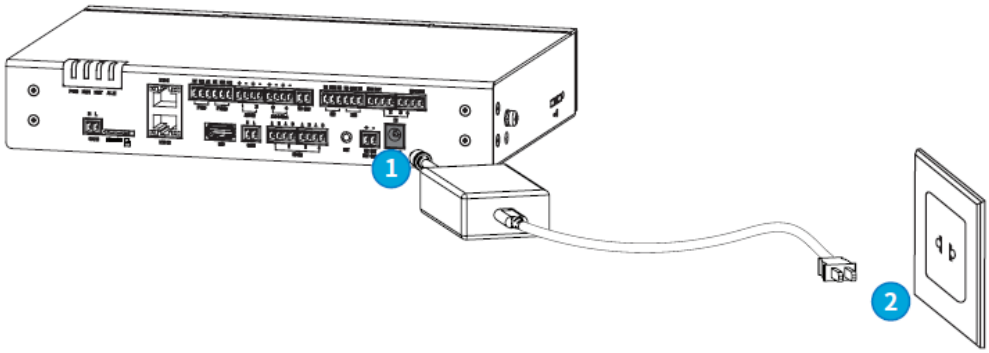
If the device is installed inside a metal enclosure, on a metal roof, or beneath a concrete roof, it is advisable to use an external suction cup antenna or RF extension cable to enhance the signal. Recommended specification: Wi-Fi 2.4G. Also, for commissioning on SolarGO, it's recommended to install the antenna.

Device Trail Operation

Do confirm the following things before power-on the device:

1. Ensure the device is securely installed, in a location that facilitates operation and maintenance, and in a clean and tidy environment.
2. Verify that the DC input cables, network cables, and communication cables are connected correctly and securely.
3. Ensure that cables are neatly organized, properly bundled, and free from damage.
4. Confirm that the input signals and power parameters are within the operating range of the device.

If everything is good, then power on the device:



Step1: Connect the power adapter to the device.
Step 2: Plug the power adapter into an AC outlet and switch on the outlet.

Then, checking the status of device by comparing with the table below:

Indicator	Indicator Status	Description
PWR		Green Light Steady On: Power supply is normal.
		Green Light Off: Power is off or there is a power issue.
RUN		Green Light Steady On/Off: Operating issue detected.
		Green Light Slow Flash: Device is operating normally.

NET		Green Light Steady On: Connection to the server is normal.
		Green Light Fast Flash: Connected to the router, but server not.
		Green Light Slow Flash: Not connected to the router.
ALM		Red Light Steady On: All inverters are in a fault state.
		Red Light Fast Flash: Device is undergoing an upgrade.
		Red Light Off: At least one inverter is functioning normally.

If you encounter an abnormal status:

- Power off the device and check all connections.
- Power the device back on to see if the issue is resolved.

For additional help:

- Consult the user manual.
- Contact GOODWE technical support.

Configuration on Embedded Web

Essential software for system installation and troubleshooting:

- **Key debugging tools to bring:**

1. Laptop
2. Ethernet cable
3. Diagonal pliers
4. Multimeter
5. USB to RS-485 converter
6. 4G module (Bluetooth module)

- **Commonly installed debugging software:**

1. GWConfig
2. GWDebug
3. ToDesk
4. MobaXterm
5. ModbusPoll
6. IEC104 protocol debugging software

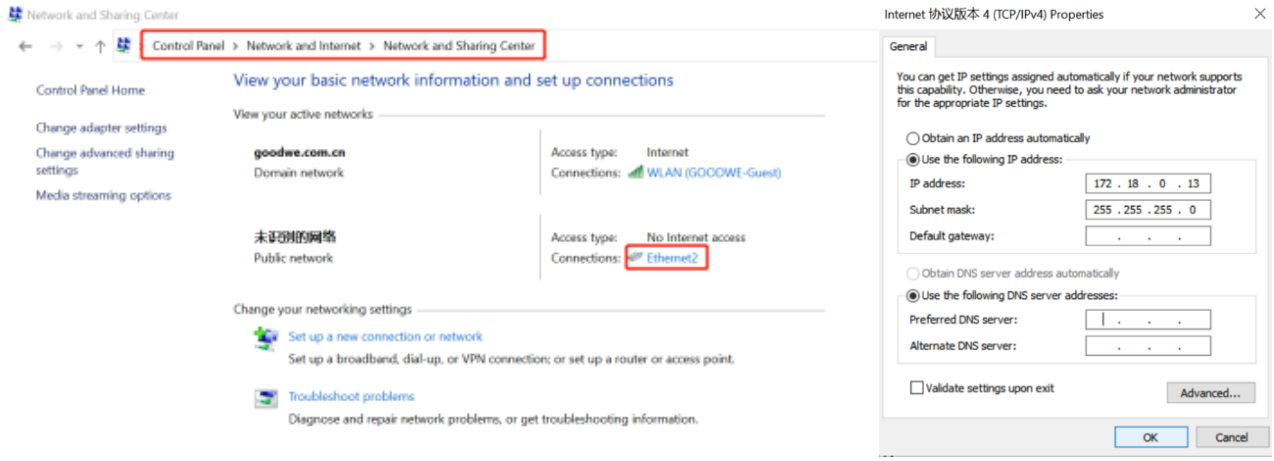
For more technical support, please contact GOODWE technical support for help.

Log in to the embedded web

There are two methods to access into the EzLogger3000C embedded web:

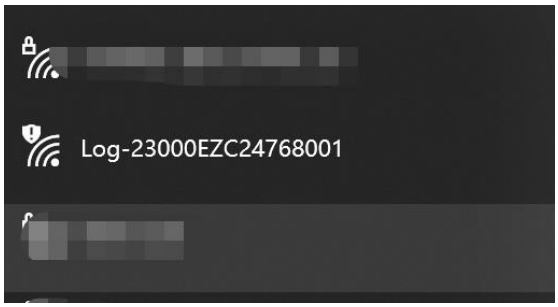
Method 1

1. Connect an Ethernet cable from the EzLogger3000C's EHT2 port to your PC.
2. Set your PC's IP address to match the EzLogger3000's network segment (e.g., if the EzLogger3000C's IP is 172.18.0.12, set your PC's IP to 172.18.0.X, where X ≠ 12).
3. Open a browser and enter https://172.18.0.12:443 to access the web interface.



Method 2

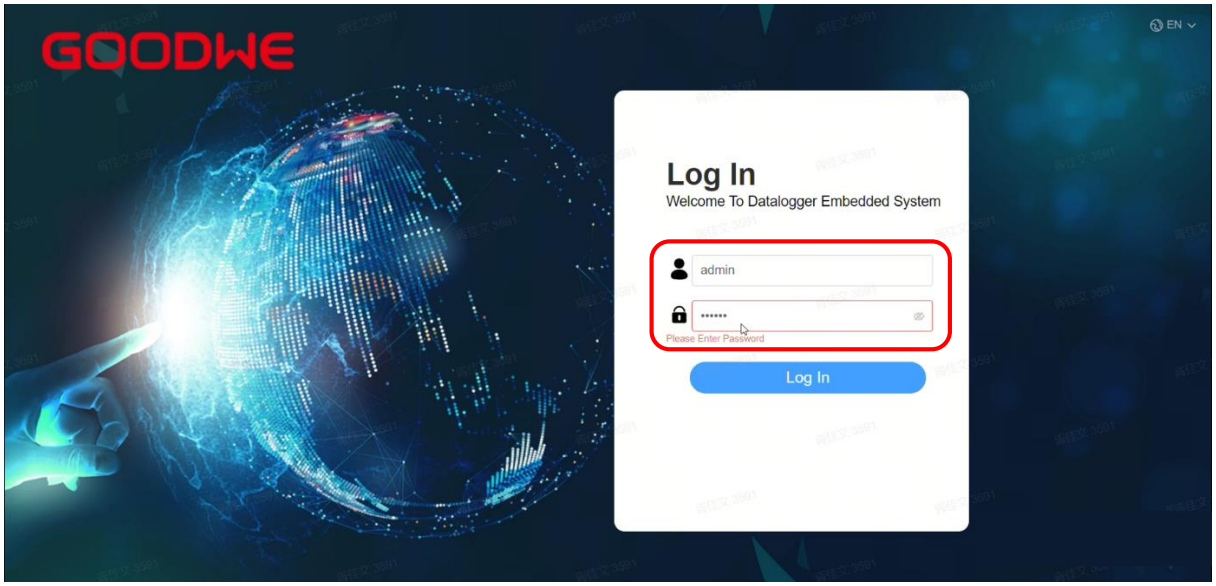
1. Open Wi-Fi settings on your PC and find the hotspot named 'Log-xxxxxxxx' (where xxxxxxxx is the serial number of the EzLogger3000C).
2. Connect to this hotspot using the initial password: 12345678.
3. Open a browser and enter http://172.18.0.12 or https://172.18.0.12:443 to access the web interface.



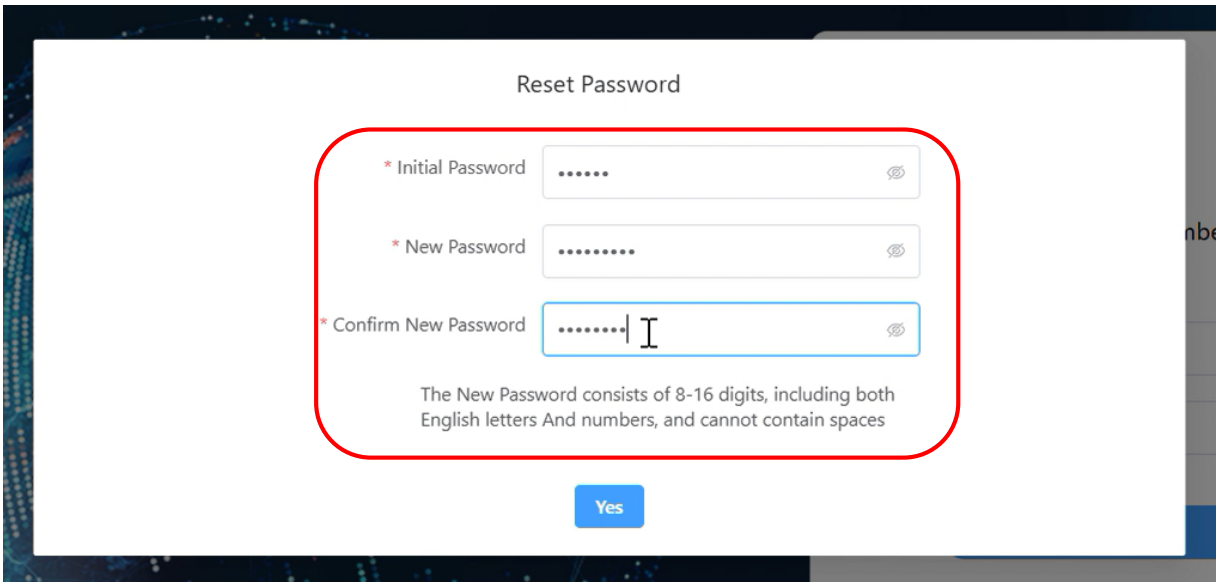
Note: If the website displays that the URL is not safe, please click advanced and then click continue to 172.0.18.12 (Unsafe).

Then, use the following credentials to log in:

- **Username:** admin
- **Password:** 123456



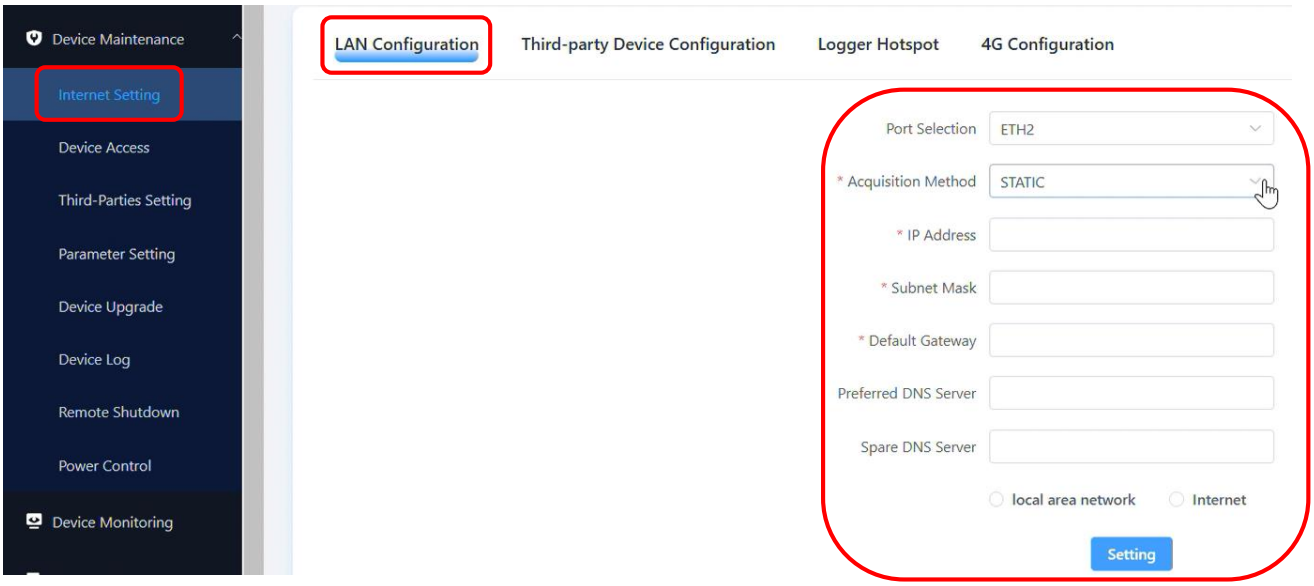
For cyber security reason, you need to modify the password then reenter again:



Configure devices and data acquisition network

When login the web, there's an initial setup wizard for guidance, just follow it to complete. Besides, details of instructions are listed here:

Internet setting



When setting up the internet configuration (LAN):

- Ensure the ETH1/ETH2 port is connected with Ethernet cable before configuring LAN.
- Default LAN setting is DHCP. Use this for router connections to the cloud.
- For switch connections or third-party forwarding, configure LAN with a static IP first.
- 4G functionality is region-specific, currently not applicable in Australia and New Zealand.

RS485 third-party configuration

When connecting the EzLogger3000C to third-party RS485 devices like transformers or EMI, you need to set up RS485 third-party configuration:

Logger Hotspot

EzLogger3000C provides a hotspot for near-end configuration. Connect your PC/ smart Arti to this Wi-Fi hotspot to access the web interface.

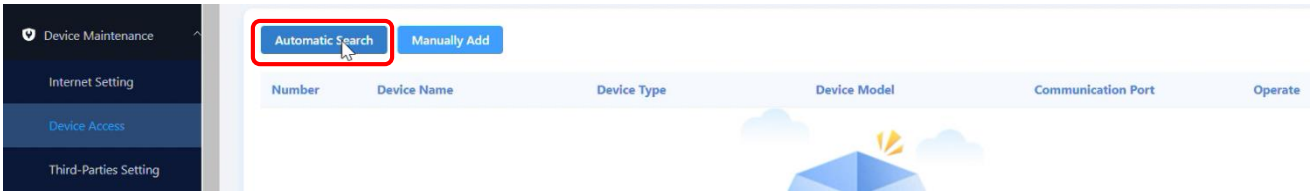
The Wi-Fi SSID and password can be changed. After modifying them, use the new SSID and password to log in to the web interface.

Automatic search (Modbus address setup method 1)

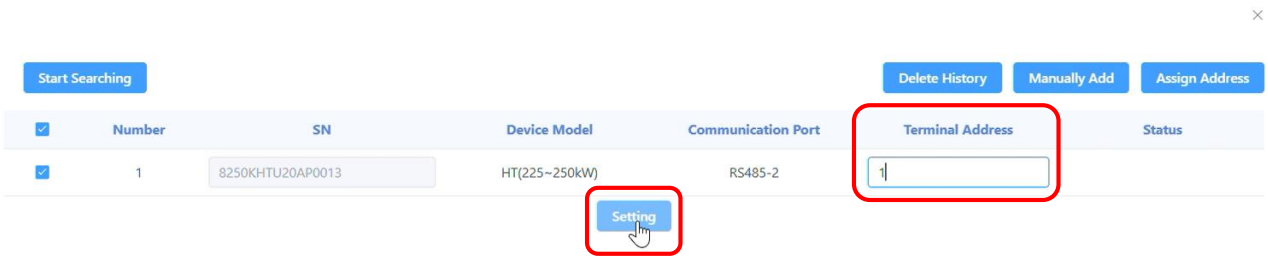
1. **Verify Inverter Connection:**

- Confirm the model of each inverter in the sub-array.
- Check for any mixed connections.
- Verify the number of devices on each RS-485 communication line.

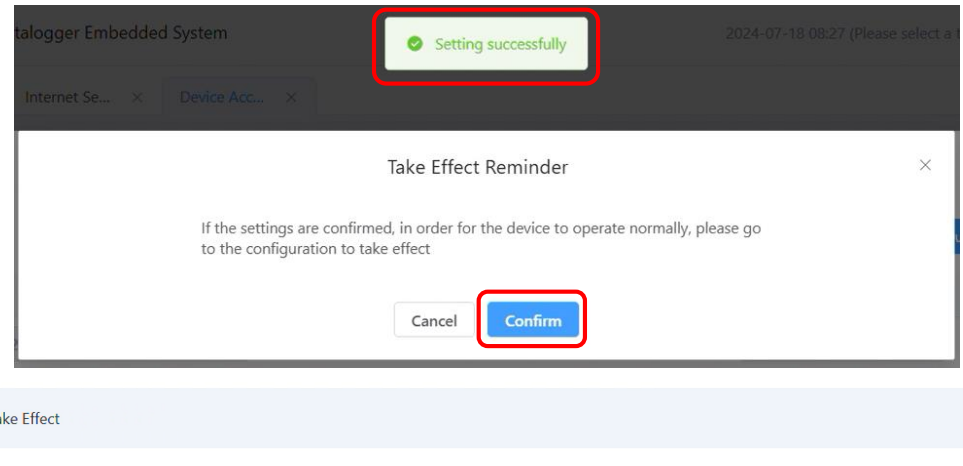
2. **Click 'Automatic Search' and wait for all the devices being searched**



3. **Make sure all the devices are searched, then click 'stop searching' and assign address for each of them:**



If needing to add more devices, just click 'start searching' again. Once you make sure all devices are found and assigned, click 'Setting'. If setting successful, it will jump to the next step to make configuration taking effect. Confirm and wait for some time.

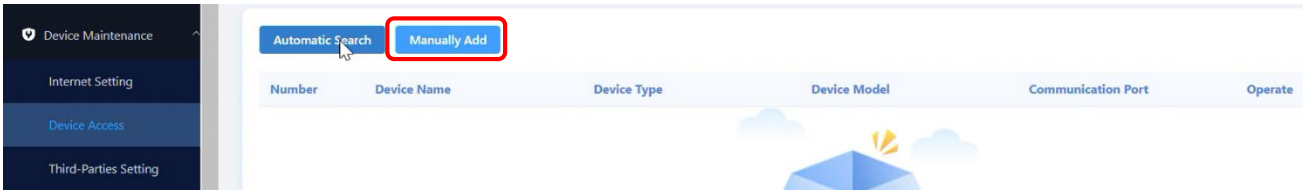


Once it done, the system will automatically jump back to the login page for cyber security requirements. Please login again with password you set at the beginning.

Manually add (Modbus address setup method 2)

For third-party meters and devices, it's the only way to setup their address. Also, it works for devices which cannot be found automatically.

Be careful when selecting the device model; an incorrect selection cannot be fixed via remote upgrades and may cause data display issues on SEMS.

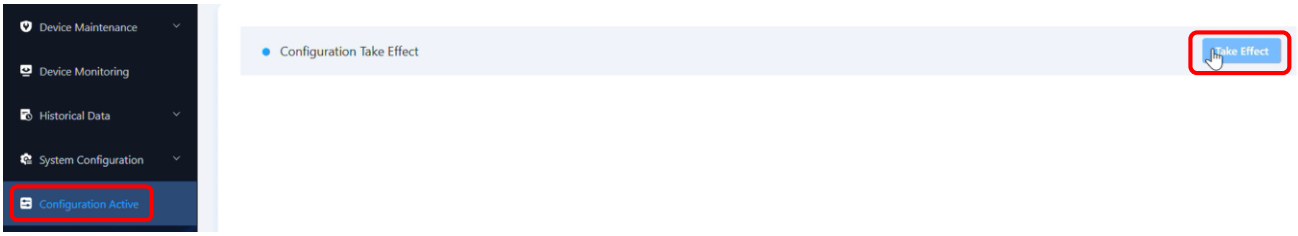


To add meters, the access point table for select third-party meters (e.g., ME110SS) is already integrated into the embedded web interface. Simply select the correct model, and it will be configured automatically.

Once adding successful, the device will be seen in the 'device access' page. To add inverters manually, follow the similar steps as the meters.

Note: If needing to use other third-party meters, please contact GoodWe Tech Support to check the compatibility.

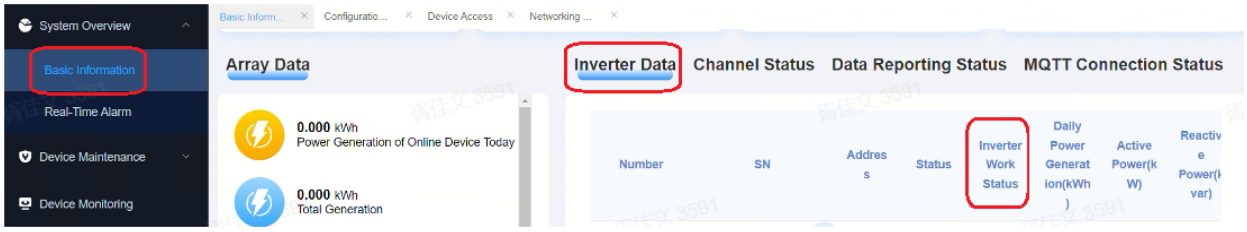
After adding devices manually, you can always edit or delete the setting for each device. If all the devices are added and well-configured, go to take effect of the configuration.



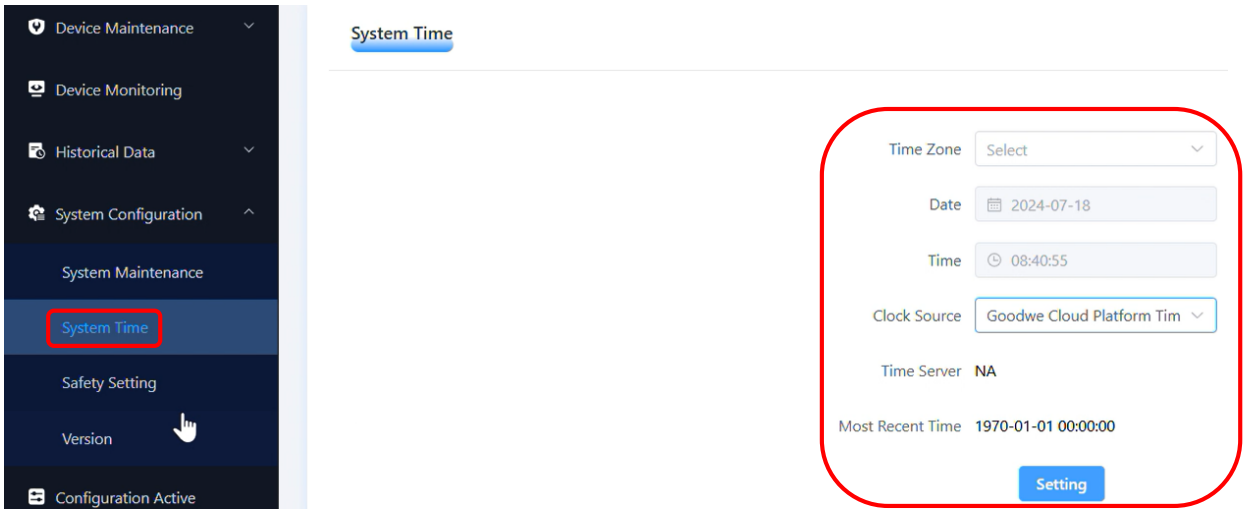
Configuration checking

Go to the homepage, if:

- **No inverter:** Configuration likely failed. Check the device access page for missed options.
- **Inverter status shows offline:** Wait for one data cycle. If still offline, contact GOODWE technical support.
- **Inverter status shows online:** Installation steps are complete.

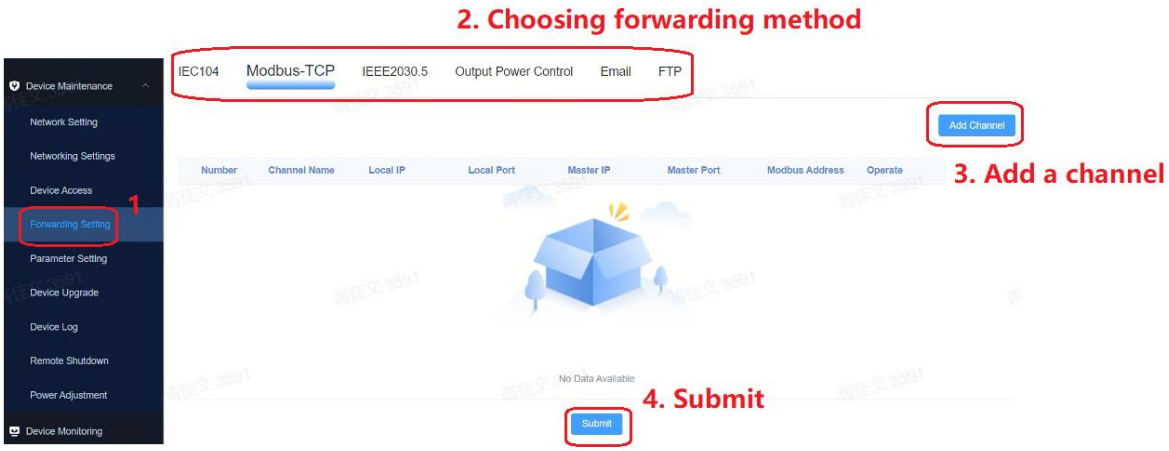


Set time zone and clock source



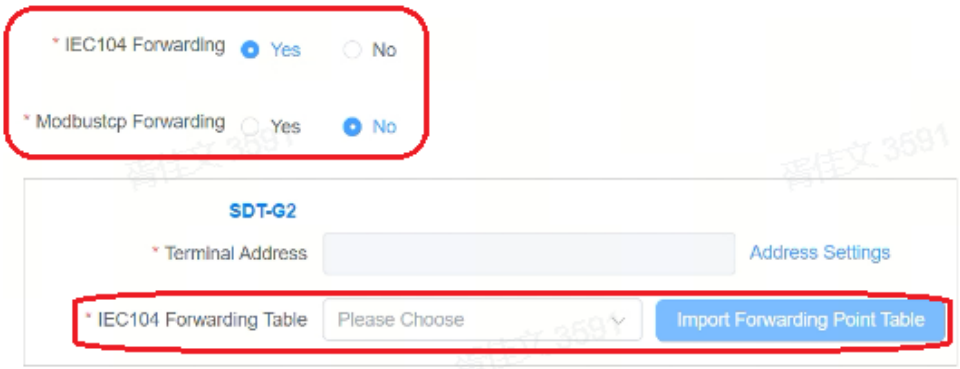
Configure forwarding parameters

Configure forwarding parameters to send data collected by the EzLogger3000C to a third-party monitoring platform using supported protocols:



Also need to set in corresponding device:

- Go to the device access page and select the IEC104 or ModbusTCP function switch based on the site's decision.
- Choose the corresponding point table for the device model. If unsure, consult the GOODWE technical support team to determine the correct point table.



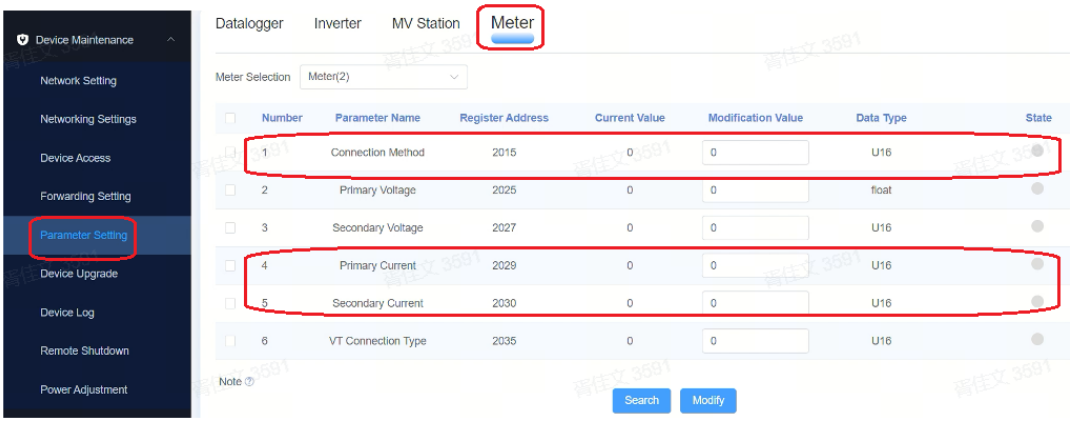
Export limit settings

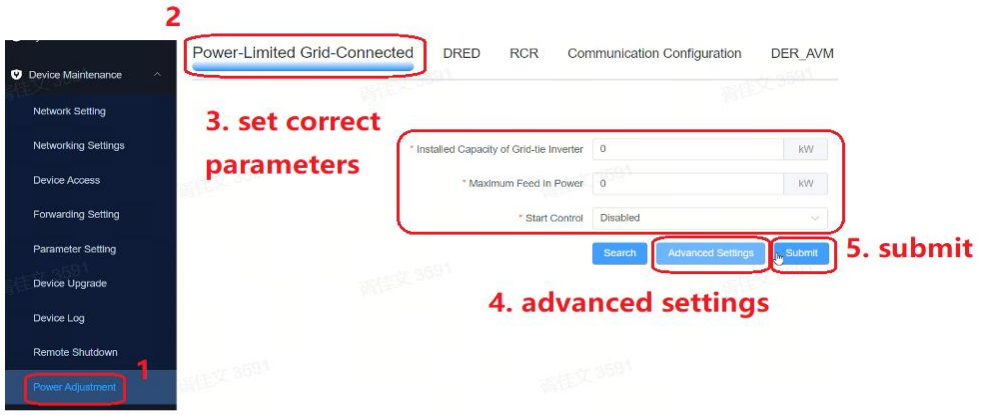
After adding the meters:

- In Device Maintenance under Parameter Settings, click Meter Interface.
- Set CT ratio (always keep the same as the value previously set on meter), PT ratio

(default 1), and wiring method.

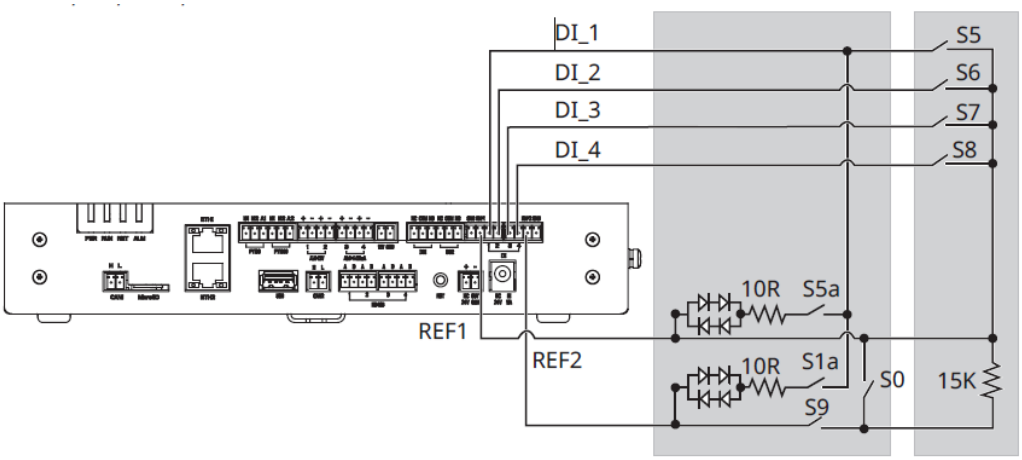
- Set export limit parameters.



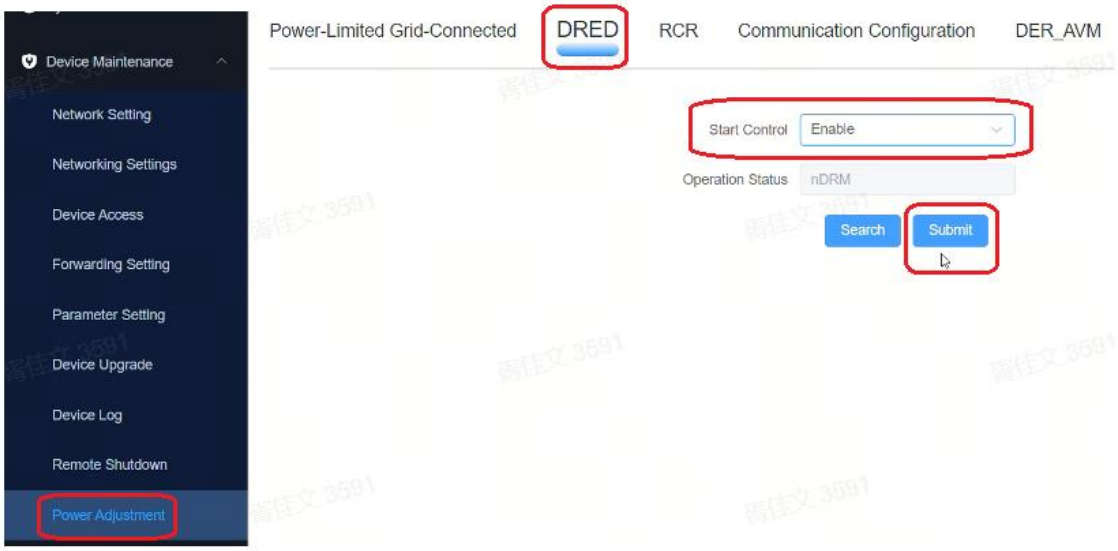


DRED/GSD

To enable DRM functionality, connect the DRED (Demand Response Enabling Device) to the EzLogger3000C's DI1/DI2/DI3/DI4/REF1/REF2 ports.



Then, enable DRED and submit:



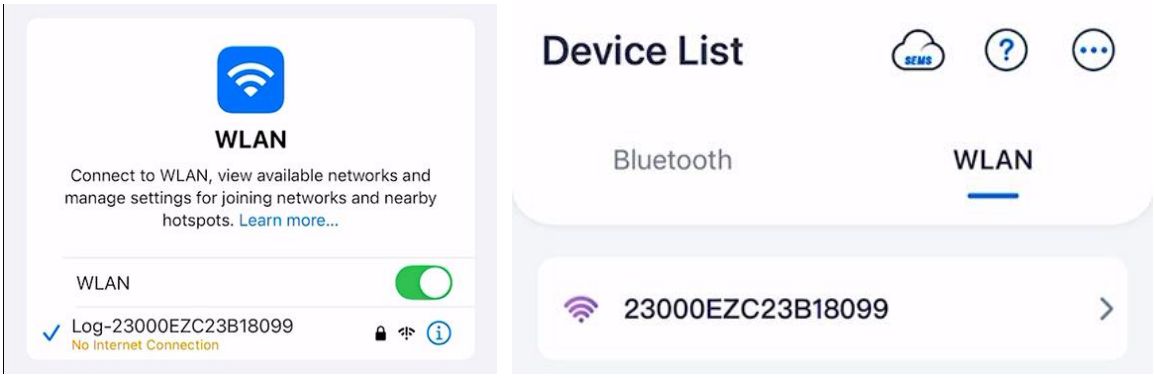
The EzLogger3000C also supports GSD devices for applications in some Australia states. To use it, only connect REF1 and REF2 of EzLogger3000C to RefGen and DRM0 of GSD. Then, enable DRED on embedded web as well.

Configuration on SolarGO

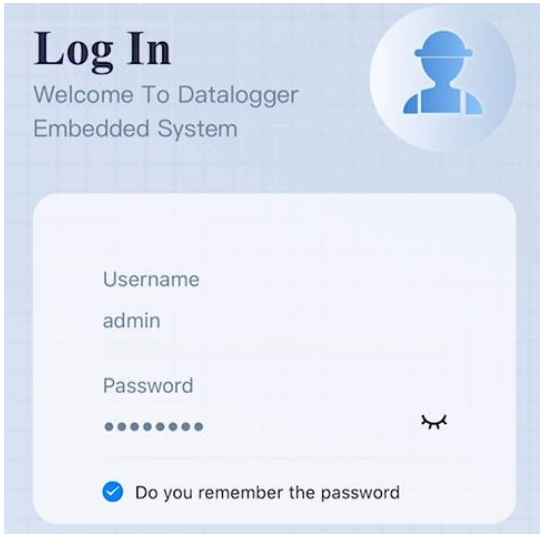
The EzLogger3000C can also be configured using smartphones. To do this, access is integrated within the SolarGO app. Simply follow the steps to log in and configure the settings:

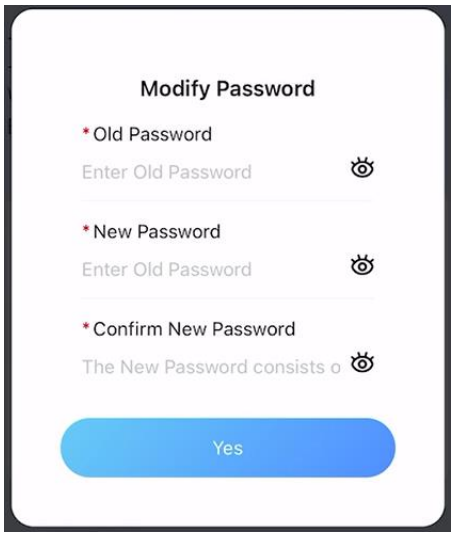
Log in the system

Firstly, ensure that your smartphone is connected to the hotspot of the EzLogger3000C. The default network name is ‘Log-xxxxxxxx’ (where xxxxxxxx is the serial number of the EzLogger3000C) and the password is ‘12345678’:



Once your smartphone is connected, open the SolarGO app. In the app, search for the EzLogger3000C you wish to configure and select it. The system will automatically redirect you to the configuration platform. Log in using the default username and password provided:

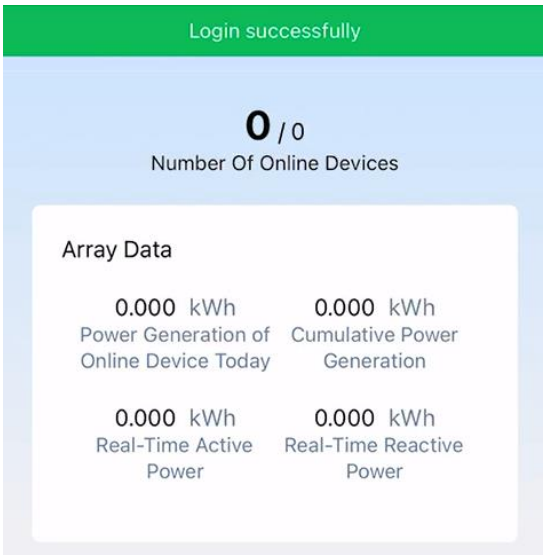




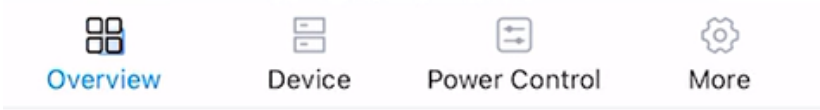
It also need you to reset the password to ensure data safety of the account. After that, login again with the password you just set.

Homepage

When logging into the system, you will see the homepage like the picture below:



Here the top part shows basic device data and status.



The bottom section lets you access different settings and configurations:

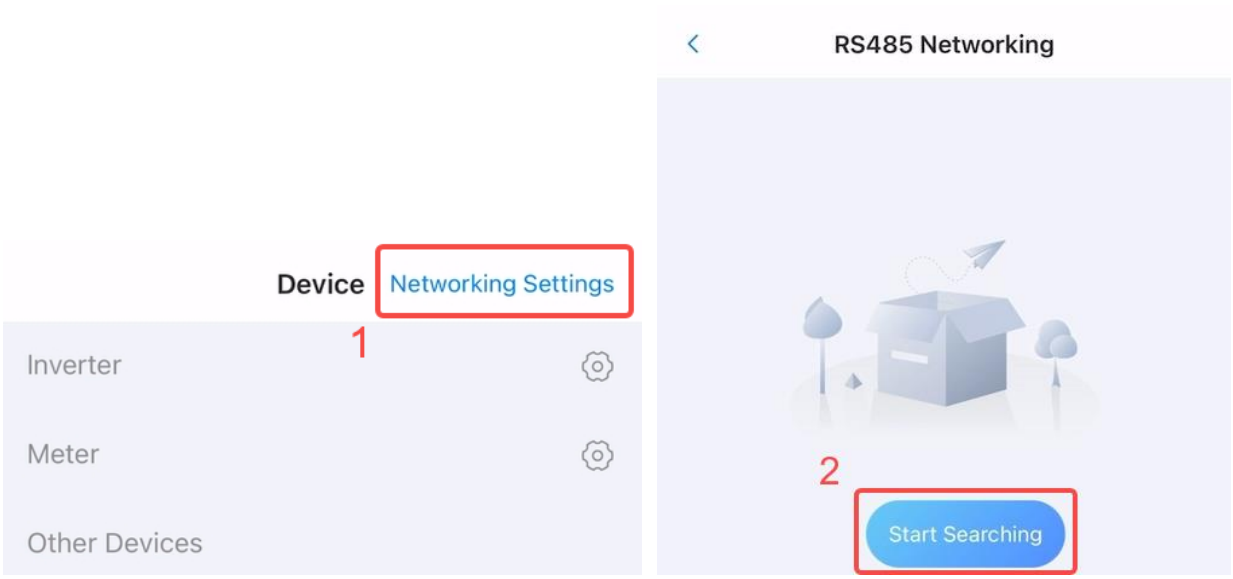
- **Overview:** return to the homepage.
- **Device:** configure inverter networking and device parameters.
- **Power Control:** set export limits and manage power export.
- **More:** adjust internet and general settings.

Configure devices and data acquisition network

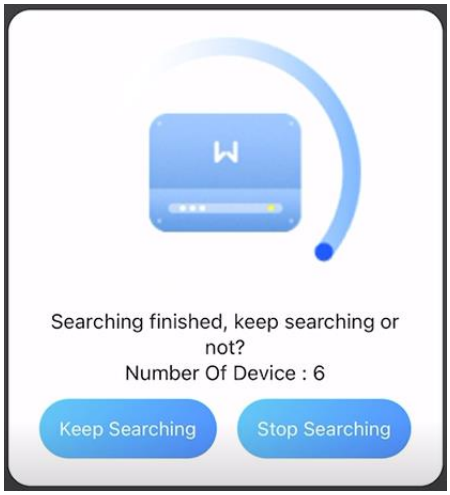
Similar to the embedded web, there are two methods to set the RS485 device network.

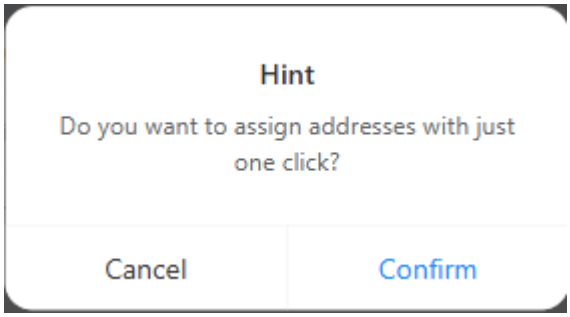
Automatically search (Modbus address setup method 1)

The first method is automatically searching. The access is on the right top of ‘Device’ page, click in and then start searching:

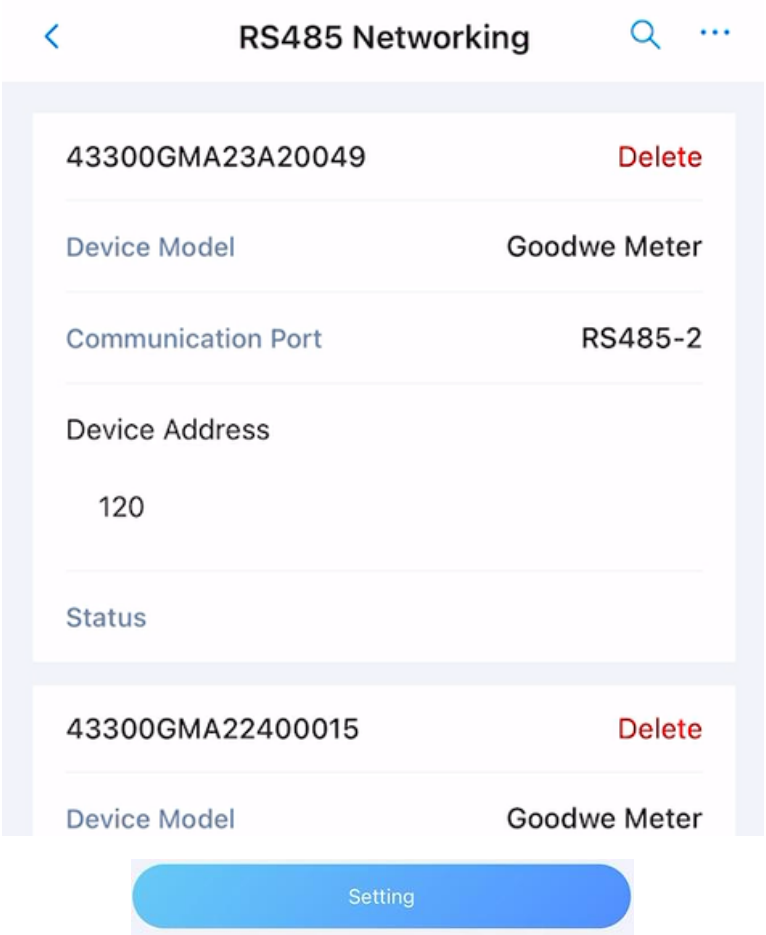


The system will automatically search for all the devices which has been connected with the EzLogger3000C. You can check the total number of device found and stop searching at any time:

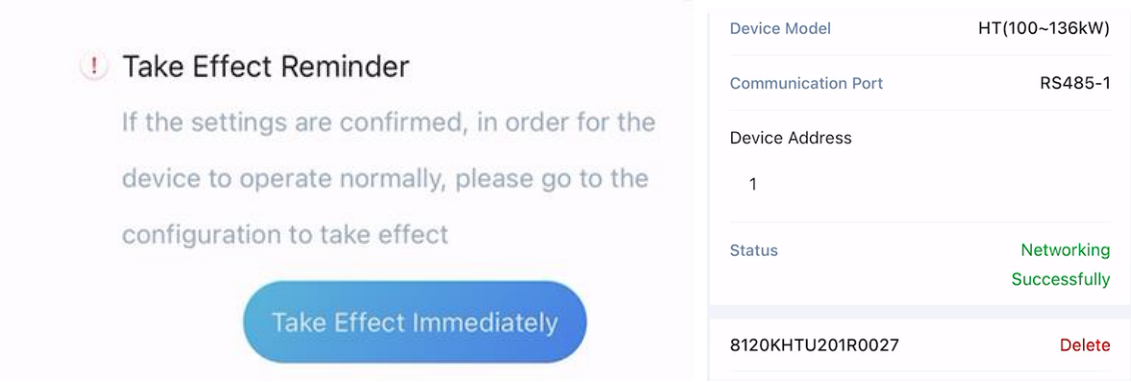




Once stop, click ‘confirm’, the system will assign the address to each device. Then, it will show basic data of each device searched:

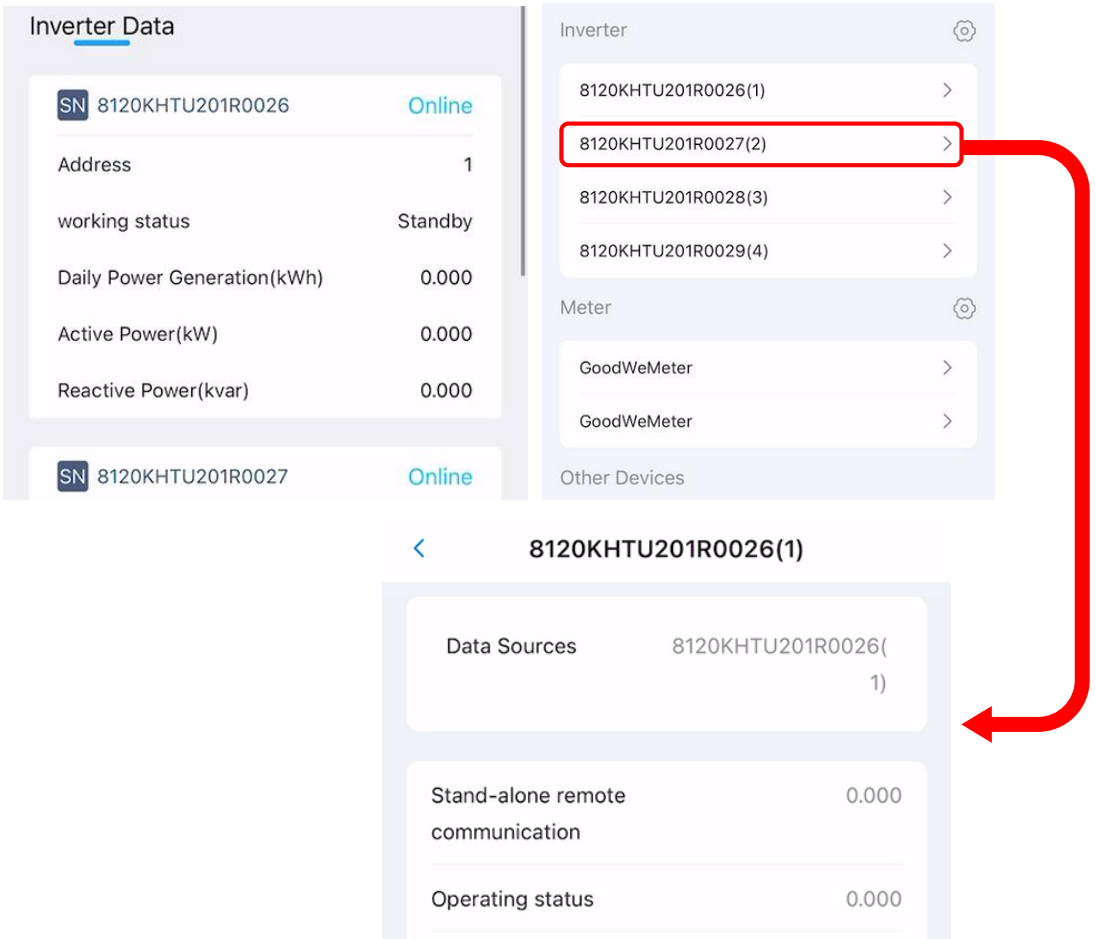


If you want to add more devices, click the ‘searching’ sign on the top, the system will go back to searching. You can also remove any device you don’t want by using the ‘Delete’ option on each device’s box. Once confirmed, click ‘Setting’ to proceed to next step：



In the take effect page, you can still check the information of each device and remove the ones you don't want. However, once click 'take effect immediately' and confirmed, you cannot go back until it is done.

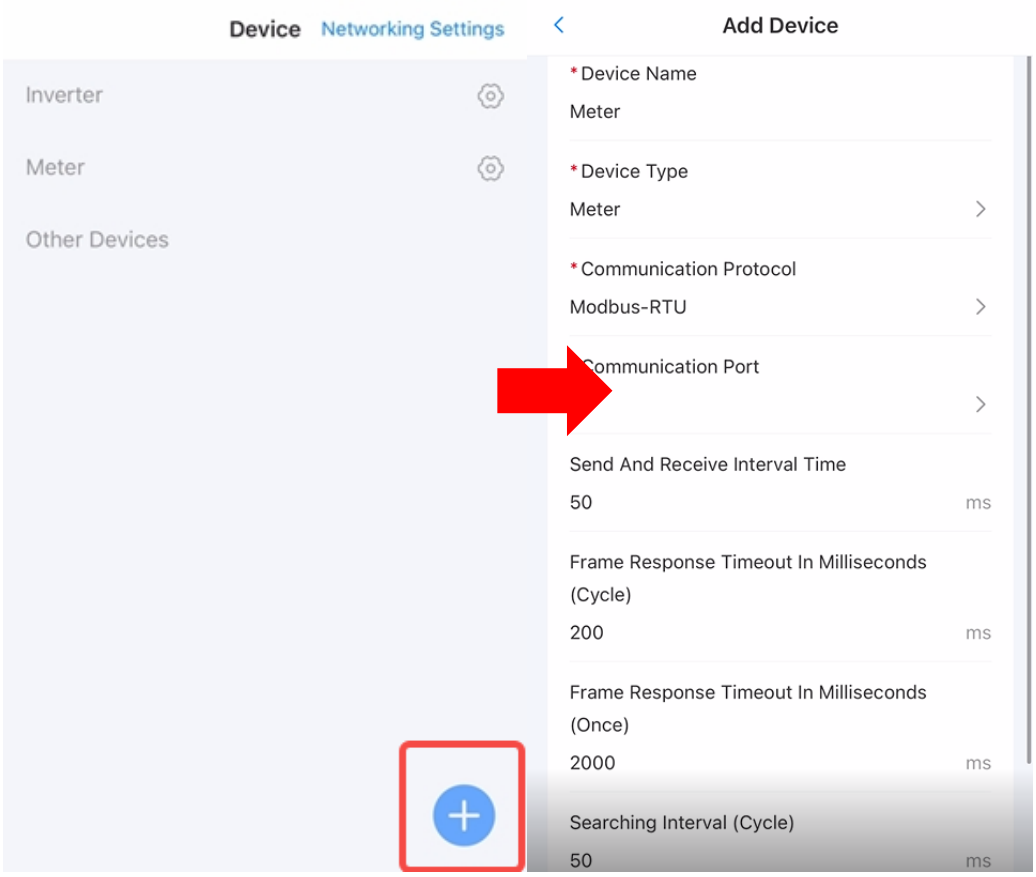
Similar to the Web, once configuration takes effect, the system will automatically go back to the login page. Login again, both the homepage and device page will show the devices:



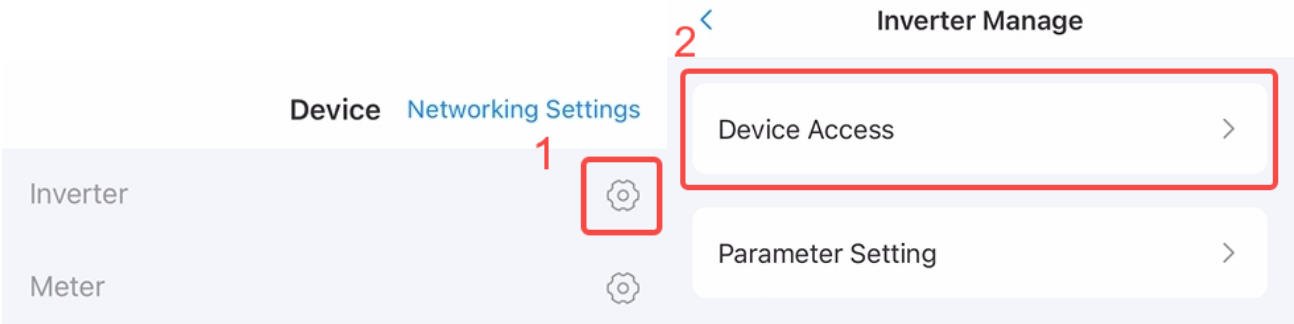
In the device page, you can check the detailed parameters by clicking into the corresponding SN of the device.

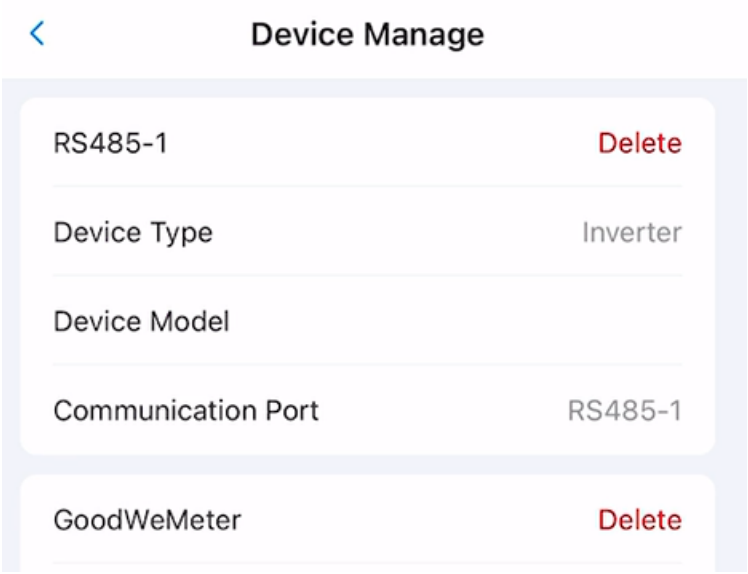
Manually add (Modbus address setup method 2)

For the devices which cannot be searched or other third-party devices, you can add them manually. The entrance is on the right bottom of the Device page:

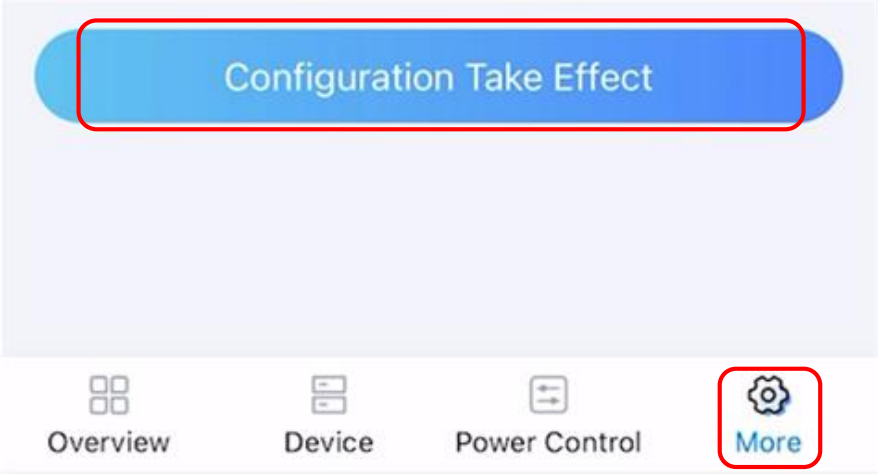


Then, just follow the same steps as the embedded web to set all the information of the devices you want to add. You can check the information of all the added devices through the device access page:





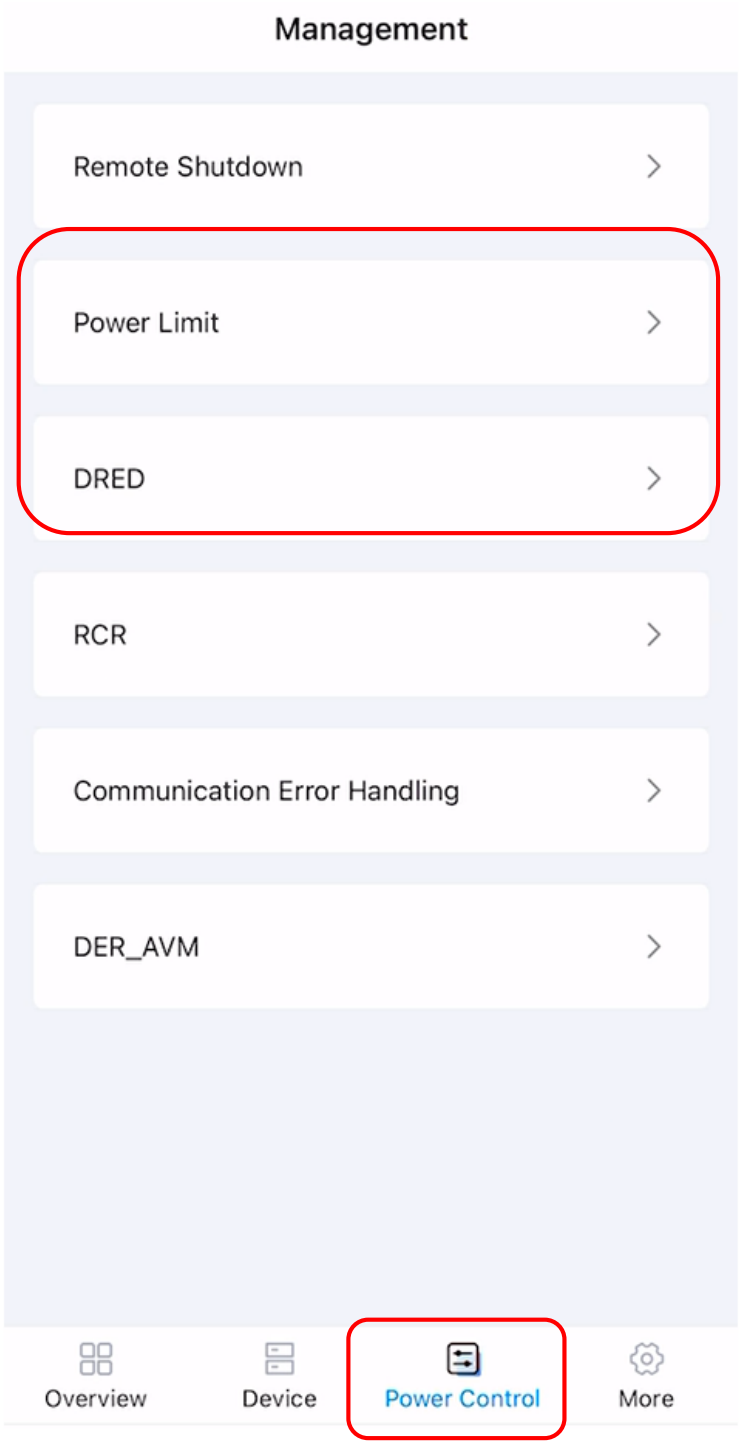
Also, you can remove any device you don't want by click the 'Delete' button. Once confirmed, go to take effect of all the settings, please refer to the picture below. The configuration may take a few seconds to take effect, please do not leave until system shows 'configuration saved successfully'.



Note: For third-party devices, always add them manually and choose the right model and register lists. If you cannot find the device you need, please contact GoodWe technical support for help.

Power Control Settings

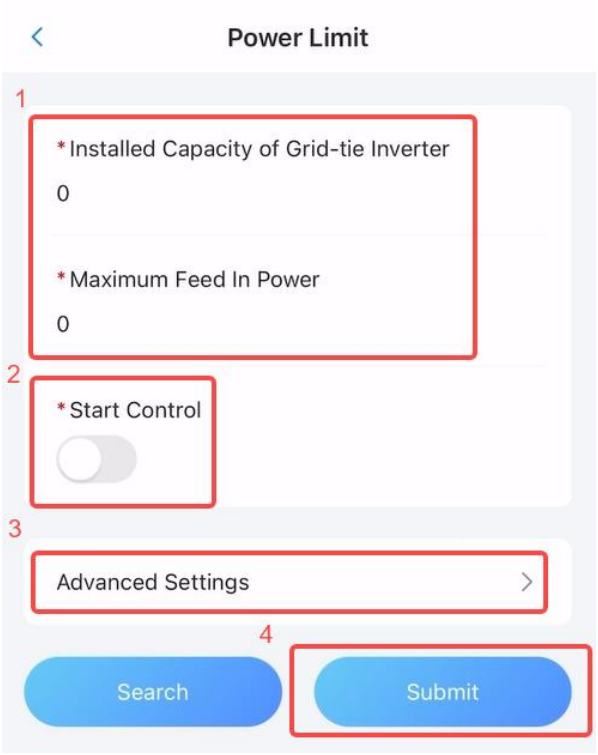
In ‘Power Control’ part, you can do settings on some energy management functions, such as export limit (power limit), DRED and others:



Always remember to take effect of all the configurations after complete settings.

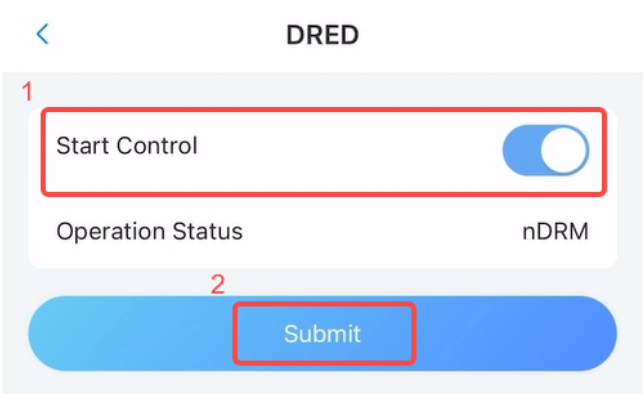
Power limit

The power limit function here is used to limit the export power of AC side. To activate this function, you need to set some value according to the real needs of the project and then enable it. Detailed process is same with the embedded web:



Here, please do mind to set CT ratio on the meter instead of only setting it in SolarGO.

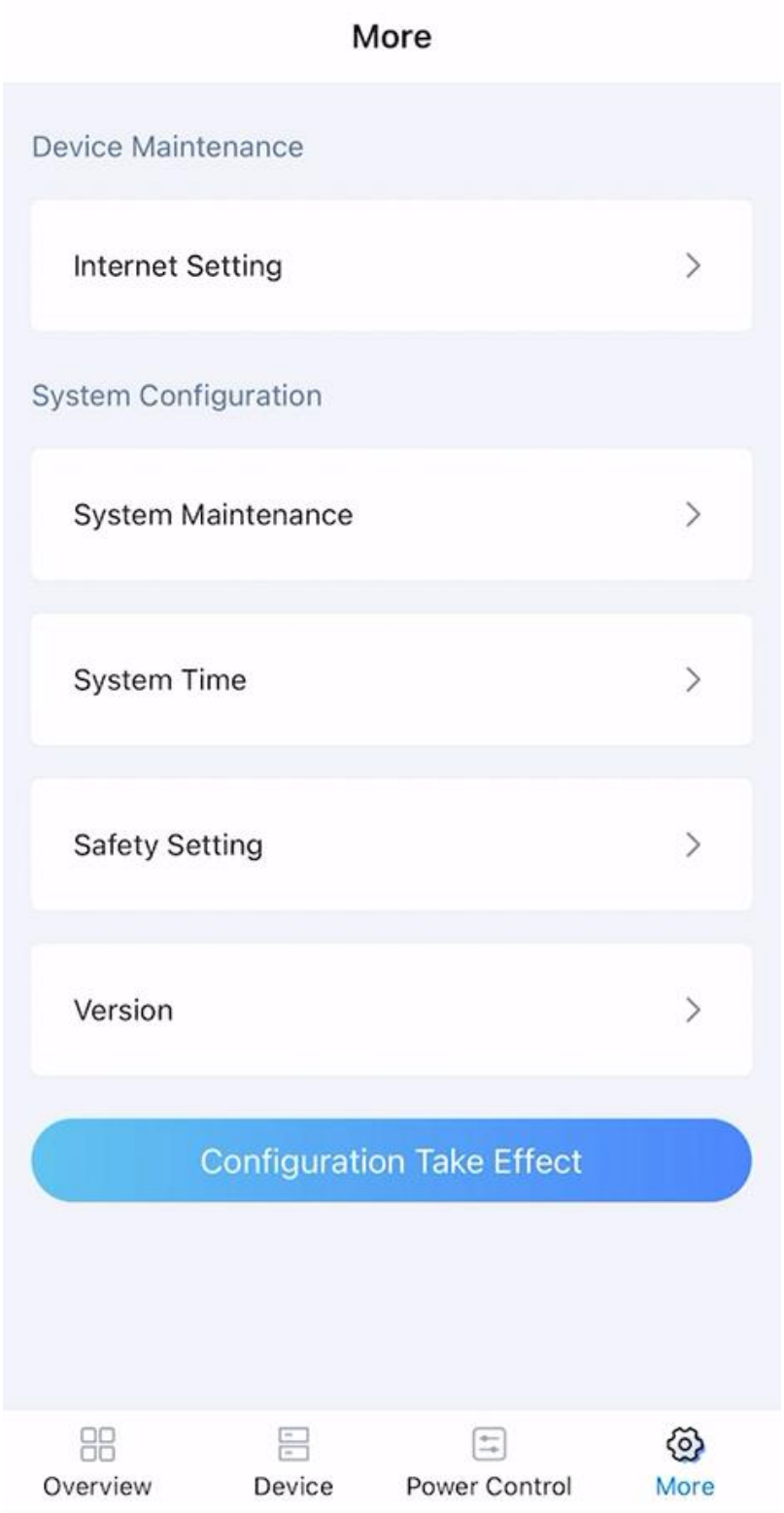
DRED



The wiring connection for DRED is same with those in embedded web part. Please step back and refer to it. Once complete the connection, just enable the function and submit.

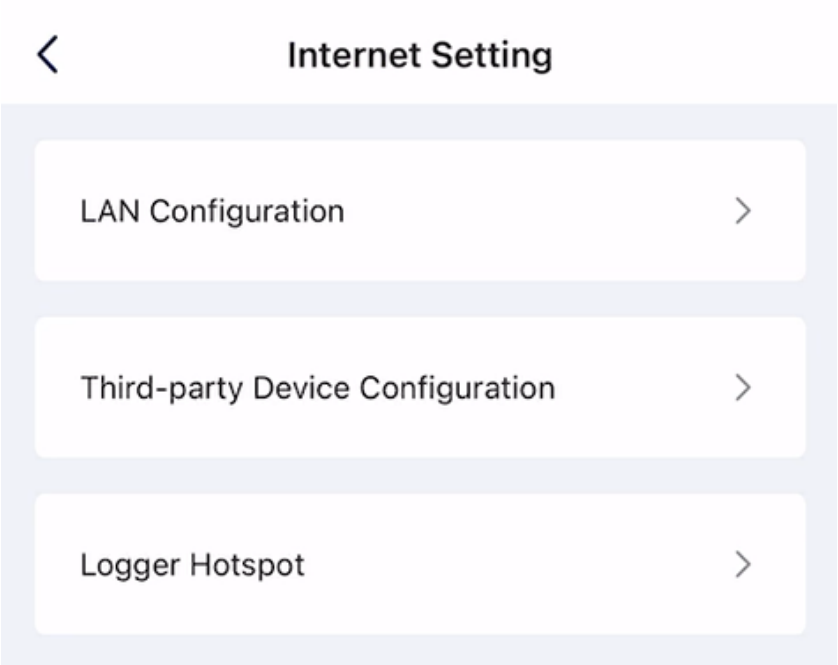
General Settings

In the ‘More’ part, you can do some general settings like the Internet configuration, time setting, reset the logger and check some information like the firmware version.

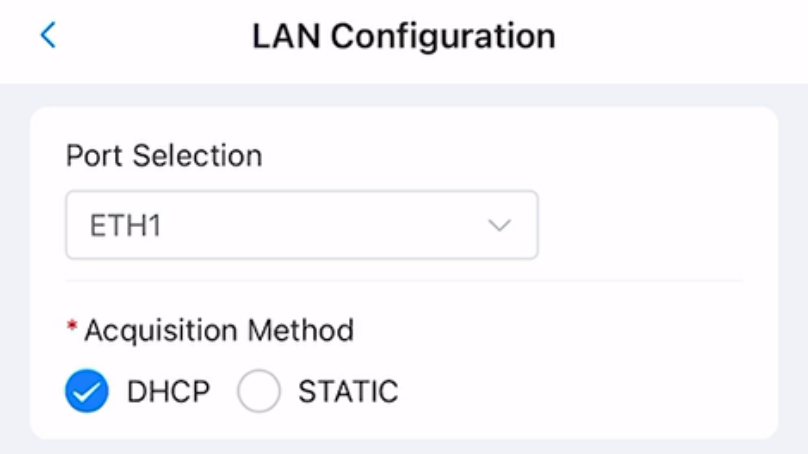


Internet setting

In this part, you can configure some Internet settings.



There are two methods to connect EzLogger3000C with server, first is using LAN and the other is 4G. However, currently in Australia, only LAN is available:

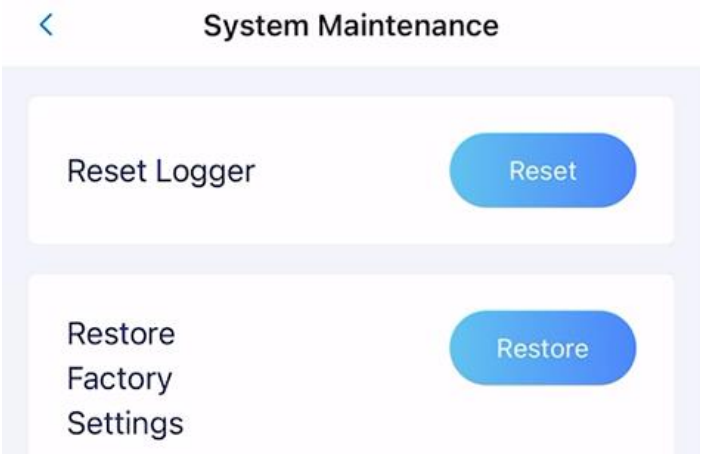


Set the port (use ETH1 for external communication) and acquisition method (normally DHCP), then submit the settings.

For third party devices and logger hotspot (local wifi), please follow the instructions of embedded web to set if needed.

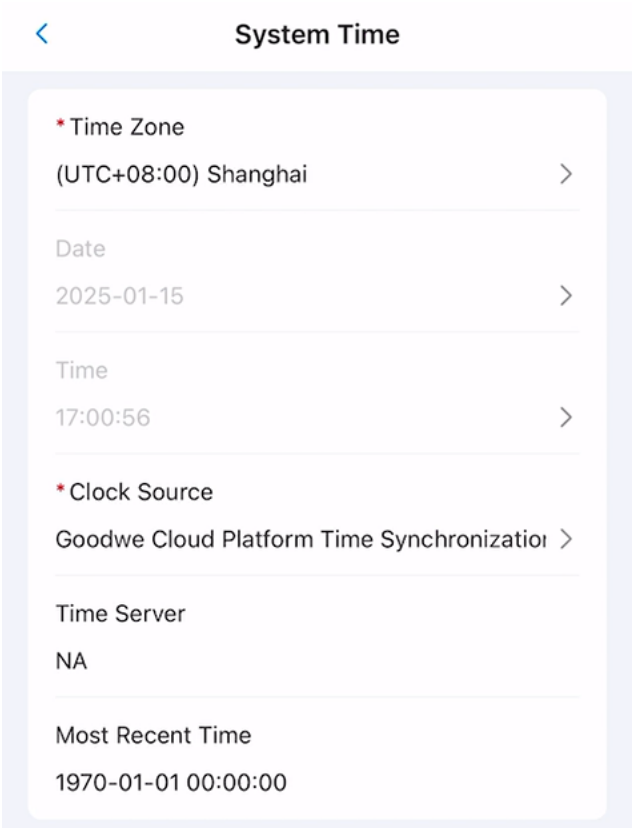
System maintenance

In this part, you can reset the communication settings or restore to factory settings. Please carefully using the second function as it will remove all the settings and configurations you did on EzLogger3000C before.



Time settings

Normally, use GoodWe Cloud as the clock source. If not working, choose management system instead and input time manually:



Safety settings

To rest the user name and password, go to safety settings in this part:

Appendix

a) Software version requirements

The following software should be checked before configuration on EzLogger3000C:

1. Inverter firmware: please referring to the latest GoodWe IoT capability list
2. EzLogger firmware: above version 04
3. SolarGO: above version 5.9.1 (434)

b) Mixing of different power levels and models

For mixing system, EzLogger3000C supports the following combinations:

Compatibility for Single-Series Multi-Inverter Systems:

1. GT100~125kW
2. SMT25 ~ 60kW
3. HT1100V
4. SDT G3
5. SDT G2
6. MT G2 (only supports AA55, does not support Modbus)

Compatibility for Mixed-Series Multi-Inverter Systems:

The same RS485 line can connect AA55 and Modbus devices (except for MT G2, which requires special software). Other models can be mixed.

Compatible Devices:

1. HT1100 (100 ~ 136kW), GT, SDT G3, SMT G1: 4 inverters can be mixed.
2. SDT G3, SMT G1, SMT G2, GT: 10 inverters can be mixed.
3. SMT G1, MT G2, SDT G3, SDT G2: 4 inverters can be mixed.